National Institute of Environmental Health Sciences

A decrease in the proportion of infections by pandemic Vibrio parahaemolyticus in Hat Yai Hospital, southern Thailand

Author(s): Wootipoom N, Bhoopong P, Pomwised R, Nishibuchi M, Ishibashi M, Vuddhakul V

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Abstract:

Infection by the pandemic clone of Vibrio parahaemolyticus is prevalent in southern Thailand. This study actively surveyed the incidence of V. parahaemolyticus infection in this area. A total of 865 isolates of V. parahaemolyticus was obtained from patients at Hat Yai Hospital, the main public hospital in Songkhla Province, Thailand, from 2000 to 2005. The isolates were examined by group-specific PCR (GS-PCR) specific for the pandemic clone, and for the presence of two major virulence genes, tdh and trh, and the O : K serotype. Representative isolates were also examined by antibiogram pattern and DNA fingerprinting using an arbitrarily primed PCR method to determine the clonal relationships between isolates. The total number of isolates was less in 2000 and more in 2004 and 2005 than in the years 2001-2003. The increase in the numbers of infections in 2004 and 2005 was not due to the emergence of a particular clone having unique characteristics, but was probably due to climate change. From 2000 to 2003, the percentages of pandemic strains of V. parahaemolyticus, defined as GS-PCR-positive tdh(+) trh(-), was stable at 64.1, 67.5, 69.7 and 67.7 % of the total isolates each year, respectively. However, in 2004 and 2005, the percentages decreased to 56.1 and 55.5 %, respectively. The O : K serotypes of the pandemic isolates remained unchanged. The proportional decrease in infections caused by the pandemic strains are probably due to the population in this area gradually developing immunity to the pandemic clone whilst continuing to be susceptible to other strains.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Food/Water Quality

Food/Water Quality: Pathogen

Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: Thailand

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Cholera, Vibrioses

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified